

Presence of the Ureter in an Inguinal Hernia: A Case Presentation and Literature Review

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Abstract. Introduction: inguinal hernias are among the most common surgical conditions. However, the presence of the ureter in the inguinal canal or scrotum is an exceptional situation, with a major risk of iatrogenic complications if not recognized. **Clinical case:** we present the case of an 83-year-old male patient in whom, during the surgical repair of the hernia, the presence of the ureter was found within the hernial sac. It was carefully released and repositioned, followed by a Lichtenstein hernia repair procedure with mesh. The postoperative course was favourable, with no urinary complications at the follow-up examination. **Conclusion:** The presence of a ureter in an inguinal hernia is an extremely rare event, which is difficult to diagnose preoperatively. Clinical suspicion and imaging studies can guide the diagnosis. Surgical vigilance and multidisciplinary collaboration are essential to prevent iatrogenic injuries and to ensure a favourable prognosis.

Key words: inguinal hernia, ureteroinguinal hernia, hernia diagnosis, extraperitoneal hernia.

Introduction

Inguinal hernias are among the most common surgical pathologies, with a high incidence in the general population, however, the contents of the hernial sac are usually represented by the omentum or an intestinal loop (1). The presence of a ureter in an inguinal hernia constitutes an exceptional entity, reported in fewer than 150 cases in the specialized literature (2). This particularity has major clinical implications, as the preoperative diagnosis is difficult, and the risk of iatrogenic injury during surgery is significant (3, 4).

The identified risk factors include male sex, age over 50, obesity, a history of kidney transplant, or congenital abnormalities of the urinary tract (2, 5). The majority of cases are unilateral, with a predilection for the right side (2,

6), but rare instances of bilateral ureteral hernias (7) or cases in pediatric patients (8, 9) have also been described.

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Imaging studies – ultrasonography, computed tomography, and in some cases, CT urography – can raise the suspicion of the diagnosis by highlighting the aberrant course of the ureter and the associated hydronephrosis (1, 2, 5). However, numerous reports indicate that the diagnosis is frequently established intraoperatively (3, 7). In cases of kidney transplant, herniation of the graft ureter can further complicate management, sometimes requiring a robotic approach or reconstructive techniques (2, 4).

The clinical consequences can range from renal colic and recurrent urinary tract infections to obstructive renal failure or urosepsis (2, 7). Therefore, the recognition of this entity and surgical vigilance are essential to prevent severe complications.

The aim of the present article is to present a case of an inguinal hernia with the ureter as part of the herniated content, which was diagnosed and treated surgically, as well as to discuss the specialized literature in order to highlight the anatomical mechanisms, diagnostic particularities, and optimal therapeutic strategies.

Clinical case

We present the case of an 83-year-old male patient with a history of arterial hypertension, ischemic heart disease, benign prostatic hyperplasia, and left renal ptosis, who was admitted for a painful left inguinal swelling and an umbilical hernia, without associated urinary symptoms. The imaging investigations (preoperative ultrasound) did not reveal any pathological findings. During the surgical repair of the hernia, a sliding inguinal hernia was identified, with the absence of a peritoneal sac, containing abundant connective and fatty tissue originating from the retroperitoneal space, exteriorized through the deep inguinal ring. The reintegration of the content was assessed as difficult, and its resection was decided upon to

achieve a tension-free wall repair. During the dissection, the presence of a tubular structure was noted, which, upon careful dissection, exhibited peristalsis and was thus identified as the ureter within the hernial content as presented in Fig. 1. It was carefully released and repositioned, after which the hernia repair was performed using the Lichtenstein procedure with mesh. The postoperative course was favourable, with no urinary complications at the subsequent follow-up.

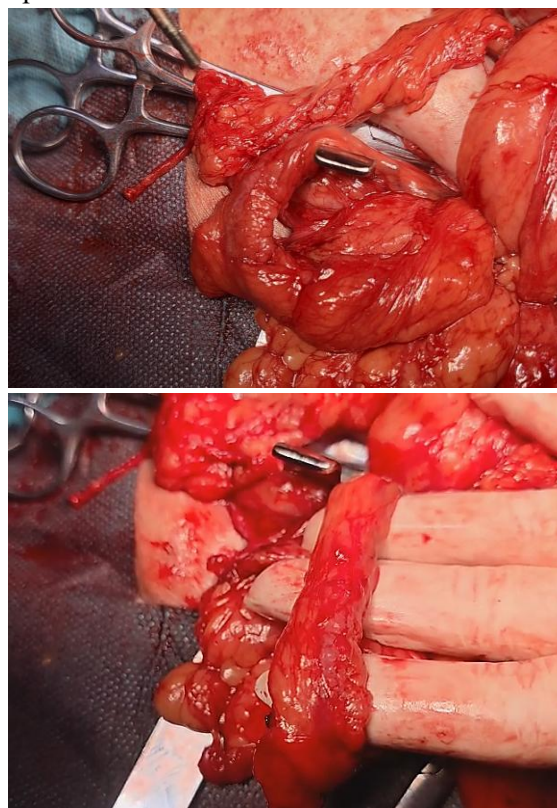


Figure 1. Intraoperative view of a tubular formation within the hernial content with present peristalsis, identified as the ureter.

Discussion

The presence of a ureter in an inguinal hernia represents an extremely rare entity, reported in fewer than 150 cases worldwide (2). The first description was made in the 19th century, and since then, the literature has recorded only small case series and isolated reports (3).

The exact pathogenesis is not completely understood. It is presumed that increased intra-abdominal pressure, congenital defects in the fixation of the ureter or its elongation, as well as obesity or a history of pelvic surgery may favours herniation (2, 4). In the case of kidney transplant patients, the graft ureter has anatomical particularities that make it susceptible to migration into the inguinal canal (5). Preoperative diagnosis remains a challenge. The majority of cases are discovered intraoperatively, during the surgical repair of the inguinal hernia (2, 6). However, modern imaging techniques such as CT and CT-urography can highlight the aberrant location of the ureter and the associated hydronephrosis (1, 7). In some situations, intravenous urography or retrograde pyelography have been used as confirmation methods (8).

The major risk of this entity is the iatrogenic injury of the ureter during surgery, which can lead to urinary fistulas, ureteral obstruction, obstructive renal failure, or even urosepsis (5, 9). Recent reports describe cases with severe outcomes, including loss of renal function (1).

Surgical management requires particular attention. Any tubular structure with an atypical appearance for a vas deferens should raise suspicion regarding the possible presence of a ureter at this level. Caution must be exercised before ligating a large volume of connective and fatty tissue that does not present a peritoneal sac, as it may be retroperitoneal tissue containing the ureter (2, 10). After identifying the ureter, it must be carefully released and repositioned into the retroperitoneal space, avoiding injury (2, 6). In cases with significant hydronephrosis or a risk of ischemia, placement of a JJ ureteral stent may be useful (7, 11). Parietal repair techniques (herniorrhaphy or hernioplasty with mesh) can be safely performed after the ureter is protected (1). In special cases, such as those in patients with a

kidney transplant, a robotic or laparoscopic approach has proven advantageous (5).

Literature reports confirm the predominance of cases in elderly males, with a right-sided location (2, 3). However, there are also rare instances of bilateral ureteral hernias (2) and paediatric cases (7, 9), which underscores the broad spectrum of clinical presentations. Case series show that carefully interpreted imaging could raise preoperative suspicion, but clinical experience and intraoperative vigilance remain decisive (1, 7).

This case adds evidence regarding the rarity, but also the importance, of this clinical entity. Surgeons must consider the possibility of the ureter's presence in the hernial sac, especially in atypical cases with associated hydronephrosis or urinary symptoms. Multidisciplinary collaboration between the general surgeon and the urologist is essential for optimal diagnosis and treatment, preventing iatrogenic complications and ensuring a favourable prognosis.

Conclusion

The presence of a ureter in an inguinal hernia constitutes an extremely rare clinical entity, but one with a significant potential for complications. Preoperative diagnosis is difficult; however, intraoperative recognition and a careful surgical approach are essential to prevent iatrogenic injuries. Beyond the rarity of the phenomenon, this type of case underscores the necessity for operative vigilance and multidisciplinary collaboration between the general surgeon and the urologist. Integrating clinical experience with data from the international literature can prevent iatrogenic complications and ensure a favourable prognosis for the patient.

Conflict of interest statement:

The authors declare that they have no financial or non-financial conflict of interest for

the data and information presented in the article. The patient signed an informed consent and agreed to the publication of the data.

References

1. Allam ES, Johnson DY, Grewal SG, Johnson FE. Inguinoscrotal herniation of the ureter: Description of five cases. *Int J Surg Case Rep.* 2015; 14:160-3. Doi: 10.1016/j.ijscr.2015.06.044. Epub 2015 Jul 21. PMID: 26280912; PMCID: PMC4573420.
2. Laurie BD. Unexpected Ureter Within an Inguinal Hernia. *Cureus.* 2023 Mar 26;15(3): e36691. Doi: 10.7759/cureus.36691. PMID: 37113347; PMCID: PMC10127551.
3. Dashtkoobi M, Haghir A, Najafi MS. A Rare Case of Inguinal Hernia of a Ureter Belonging to a Duplex Kidney. *Case Rep Surg.* 2023 Jun 27; 2023:1285212. Doi: 10.1155/2023/1285212. PMID: 37409326; PMCID: PMC10319468.
4. Isernia RM, De Luca GM, De Luca A, Franzoso L, Navazio LR, Caruso R, Ferri V, Ielpo B, Giungato S. Sliding ureteral inguinal hernia: An uncommon embryological trick. Case report and literature review. *Int J Surg Case Rep.* 2022 May; 94:107006. Doi: 10.1016/j.ijscr.2022.107006. Epub 2022 Apr 2. PMID: 35429782; PMCID: PMC9026589.
5. Lima DL, Viscarret V, Nogueira R, Watts K, Malcher F. Transplant Ureter Inguinal Herniation Treated by Robotic Inguinal Hernia Repair. *CRSLS.* 2023 Sep 22;10(3): e2023.00020. Doi: 10.4293/CRSLS.2023.00020. PMID: 37745795; PMCID: PMC10516261.
6. Areda MA, Bailey CR, O'Mara D, Weiss CR. Transplant uretero-inguinal hernia resulting in urosepsis. *Radiol Case Rep.* 2018 Oct 3;14(1):14-17. doi: 10.1016/j.radcr.2018.09.002. PMID: 30305858; PMCID: PMC6172483.
7. McQueeney BE, Breiner M. A Rare Occurrence of Bilateral Ureteral Presence Within Inguinal Hernias in a Military Veteran: A Case Report. *Cureus.* 2024 Oct 4;16(10): e70831. Doi: 10.7759/cureus.70831. PMID: 39493126; PMCID: PMC11531925.
8. Cianci MC, Tocchioni F, Mantovani A, Ghionzoli M, Morini F. Unexpected Pediatric Uretero-Inguinal Hernia: Case-Report and Literature Review. *Urology.* 2023 Jun; 176:178-182. Doi: 10.1016/j.urology.2023.02.015. Epub 2023 Feb 24. PMID: 36841359.
9. Delgado-Miguel C, Muñoz-Serrano AJ, Aguado P, Fuentes E, Díez R. Ureteroinguinal Herniation with Consecutive Ureteral Stricture in a 2-Month-Old Infant: Case Report. *European J Pediatr Surg Rep.* 2024 Jan 22;12(1): e16-e19. Doi: 10.1055/s-0044-1779253. PMID: 38259259; PMCID: PMC10803183.
10. Yahya Z, Al-Habbal Y, Hassen S. Ureteral inguinal hernia: an uncommon trap for general surgeons. *BMJ Case Rep.* 2017 Mar 8;2017: bcr2017219288. Doi: 10.1136/bcr-2017-219288. PMID: 28275027; PMCID: PMC5353493.
11. Turner A, Subramanian P. Ureteroinguinal Hernia: A Rare General Surgery Phenomenon. *Cureus.* 2021 Dec 21;13(12): e20586. Doi: 10.7759/cureus.20586. PMID: 35103162; PMCID: PMC8777048.